

# ABSTRACT

A wastewater treatment facility incorporates a trivalent cation salt to promote coagulation of flocculent material. The trivalent cation salt is typically added between a primary and a secondary treatment stage in the wastewater treatment facility. The trivalent cation is typically an aluminum salt. The amount of trivalent cation can be optimized by targeting a  $(M/D)/T$  ratio of less than about 1.0, where M is a monovalent cation equivalent concentration and D is a divalent cation equivalent concentration in the wastewater and T is a mass of the trivalent cation in the sludge. The amount of trivalent cation can also be optimized by targeting a M/T ratio of less than about 1.0, where M is a monovalent cation equivalent concentration in the wastewater and T is a mass of the trivalent cation in the sludge.